DECLARATION OF SEPPO ROUSU

I, SEPPO ROUSU, residing at Sahankuja 1, FIN-90800 Oulu, Finland, do declare and say:

1. I am an employee of Nokia Corporation, and am a resident citizen of Finland and am an inventor named in the U.S. Patent Application 10/559,918 which is the U.S. National Stage of PCT Application IB03/02174 filed June 10, 2003.

2. I submitted an Invention Report dated on a date prior to May 15, 2003 to the Intellectual Property Rights Department of my employer, a copy of which is attached as Attachment 1.

3. As a follow-up, I sent a Power Point slide set (Attachment 2 showing pages 1 and 9-17 thereof) a week later with further technical information representing structures that appear in Figures 2-8 of the subject U.S. Patent Application Serial No. 10/559,918 and at that time co-inventor Marko Leinonen was added.

4. These figures represent a definite and permanent idea of the complete and operable invention described in the subject patent application.

5. For instance, Figure 4 of the subject patent application is very similar to that which is shown in page 11 of the Power Point slide set attached hereto.

6. It illustrates an example of that which is covered by the independent claims of the present invention.

7. For example, claim 1 claims a receiver comprising at least a first receiving chain and a second receiving chain which is shown in the top portion of page 11 of the Power Point presentation as well as in Figure 4 of the subject patent application as symbolized by reference numerals 44 and 43.

8. Both Figure 4 of the subject patent application and page 11 of the Power Point presentation show the next claimed element of claim 1, i.e., a first antenna connected to the first receiving chain and in addition via a switching component to the second receiving chain.

21- Jan -2008
Seppo Rousu

9. This is shown in the top part of both Figure 4 of the application and page 11 of the Power Point presentation.

10. A tuning component is shown as reference numeral 417 in Fig. 4 of the patent application and as a Diplexer in page 11 of the Power Point presentation.

11. A controlling portion is shown by reference numeral 42 in Figure 4 of the patent application sending a control signal on a line 41 to the Diplexer at reference numeral 417.

12. This is also shown in page 11 of the Power Point presentation.

13. This Power Point presentation was sent by me to Tina Ojala at the IPR Department of my employer prior to May 15, 2003.

14. I received a first draft patent application on or about May 15, 2003 and commented thereupon.

15. I sent my comments back to the IPR Department for forwarding to the patent firm of Cohausz & Florack who prepared the first draft.

16. I received a second draft on or about May 23, 2003 and commented upon back to the IPR Department on June 2, 2003..

17. On or about June 3, 2003 I sent final comments back to the IPR Department.

18. The text and drawings of the international application PCT/IB03/02174 filed June 10, 2003 are sufficient to enable any person of skill in the art how to make and use the invention claimed therein and correspond to the fully formed conception thereof evidenced by the slides shown in Attachment 2.

19. All of the above described events involving the sending and receiving of emails by me occurred in Finland which is a WTO country and was a WTO country at the time of these events.

I further declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that all these

21- JAN-2008
Seppo Rousu

statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code.

Date: 21-JAN-2008 Seppo Rousu

Seppo Rousu

21-JAN-2008
Seppo Rousu

ATTACHMENT 1
SEPPO ROUSU

NOKIA **CONFIDENTIAL**

INVENTION REPORT

Title of the invention: GPS antenna detuning when GSM transmitter is transmitting	**INVENTION REPORT RECEIVED** Code: 36615 Patent Engineer/Committee:
Please type the description of the invention in this template. If you choose to use an attachment, make sure you answer all the questions in the template.	Place: Oulu Date: REDACTED Signature of receiver: Taija Ahlroos

Names, employee numbers, job titles and nationalities of **all inventors**:	Home addresses of the inventors in respective order:	Business/Technology Units and cost centres:
Seppo Rousu	Seppo Rousu Sahankuja 1 90800 Oulu Finland	NMP Technology

Email addresses of the inventors working outside Nokia:	
Office address of the **first inventor acting as a contact**: Elektonikkatie 10, 90571 Oulu	
Phone of the first inventor: +358 (0)50 5626068	Fax of the first inventor:
Line manager(s): Tomi Moilanen	
Project: Grape engine platform	Project Manager: Mika J. Väyrynen
Related product(s): Grape, Yoda	Related standard(s):
The invention becomes public on (see section 11 of the invention report): 1Q/05	

I am/ We are the sole/ and original inventor(s) of this invention.

The company may, by virtue of applicable legislation, be entitled to full or partial rights to the invention. I/ We acknowledge my/ our obligation to sign as inventor(s) all documents that may be required for protecting the invention in different countries.

Applicable to Inventions made by Inventors employed in FI, DK, DE and SE only.
Unless the inventor requests the Invention Report to be responded to within four (4) months from the date this Invention Report is received or such other period as the mandatory provisions of the applicable local law may otherwise require, the inventor consents to the right of the employer to use a reasonable period of time for the evaluation of the invention. A reasonable period of time may exceed four (4) months.
☒ *I/ We request that the Invention Report be responded to within four (4) months.*

Date: REDACTED
Signature(s) of Inventor(s): Seppo Rousu

FORMAL REQUIREMENTS FOR FILING THE INVENTION REPORT

The invention report must have the names of all the inventors and their home addresses. **The first mentioned inventor is assumed to be the contact person** in matters concerning the invention report. In the fields of office address, phone and fax, please fill in the contact person's information. Fill in the project field, if the invention is made in a project. **The original Invention Report is signed by all inventors.** Each page of the original invention report is signed by a manager. In case it is difficult to obtain the manager's signature your patent department will take care of it. The signed invention report is given directly to the local or business or unit's patent department. The invention report should also be submitted electronically to the patent department of the business or technology unit.

I have read and understood the invention described in this Invention Report

Date:
Signature of Manager or Patent Engineer

1

21-JAN-2008
Seppo Rousu

NOKIA CONFIDENTIAL

DESCRIPTION OF THE INVENTION

1. Field of technology and background

Describe here the technology and the areas of use the invention relates to. Provide here general background knowledge that is required to understand the framework of the invention, and describe the problem to be solved and the invention later.

GSM and GPS (Global Positioning System) will be implemented in same phone. GPS receiver is not performing well if GSM transmitter is transmitting.

2. Problem

Describe here the problem that the invention solves or the situation that the invention improves, and preferably concentrate on the technical aspects of the problem or the situation.

GSM PA generetes noise to GPS band 1575.42 MHz +/-5 MHz. This wideband noise prevents performance of GPS receiver

3. Prior art

Describe here how the problem was solved earlier. Please state also the source of prior art accurately.

Currently we have two possible solutions to solve problem in Nokia platforms.

A) Place GPS notch filter in Transmitter chain to reduce TX noise on GPS band
B) Use patented solution by third party. GPS receiver is blanked when GSM transmitter is transmitting.

4. Invention

Put here a short crystallization of the invention on a general level including possible use cases.

Invention is to increase attenuation between GPS and GSM antennas. Attenuation is increased by detuning GPS antenna out of GPS frequency. This operation is done only when GSM transmitter is transmitting. When GSM is not transmitting, in that case GPS antenna is in normal center frequency operation mode.

5. Implementation

Describe exemplary implementations in detail with alternatives here, including at least the implementation you consider to be the best. Describe the crucial elements in detail.

Implementation is done by detuning GPS antenna center frequency to other frequency. Tuning can be done by diode or other suitable components.

6. Advantages and disadvantages

Describe here how the invention improves earlier solutions. Also, if you are aware of any advantages or disadvantages, please state them here.

Considering chapter 3.

A) Additional components is not needed in transmitter chain.
GPS Notch filter causes loss to tx path and increases current consumption and heating.
Talktime and standtime are decreased.

I have read and understood the invention described in this Invention Report

Date:
Signature of Manager or Patent Engineer

21- JAN-2008
Seppo Ruuska

Invention is cheaper than solution A.

B) Advantage is that IPR royalties is not needed to pay for third party.

7. List of figures

Write the figure captions here as a list (Figure 1 presents ..., Figure 2 presents ...) and include the images into the invention report (section 5 or section 15) in Word-compatible format (i.e., no embedded images that won't show on the screen when the document is viewed) labelled with the figure number (Figure 1., Figure 2.). Alternatively, include the figures in a separate document (PowerPoint etc.), but make sure to include the description of the figures also here.

8. List of abbreviations

9. Supervision

Explain here how we can (if possible) recognise if a competitor is using the same product/feature.

By opening competitors phone.

10. Commercial value

*Evaluate three aspects here: **a)** is the invention planned to be used in a Nokia product (which), **b)** is the invention going to be proposed to a standard (which), and **c)** would Nokia's competitors benefit from the use of the invention (who/how)?*

a) Invention is potential solution to used in all GSM/GPS Nokia products, Grape engine platform
c) Competitors can use also Invention when cross lisenced.

11. Publication

If the invention is becoming public in any way, please describe the exact way and details of publication here: what will be disclosed and how. For example, submission of standardization contributions, scientific papers, conference abstracts, theses or papers written for a degree and commercial brochures and offers for sale may be considered as "publication". Also, any use in a product that is publicly available or disclosure (written or oral) to another company without a non-disclosure agreement (NDA) is considered to be a publication.

Invention is applicable with Gryphons GPS by Nokia, which will be available 1Q/05. Yoda is may be lead product to use GryPhonS.

12. Dates of the invention

If you can, put here the date when you first thought of the invention (this date should be verifiable from your personal dated notes). Also, if you have completed the invention, e.g., written a computer program, put this date here (the completion should be verifiable by a witness). Also, provide all evidence material relating to the dates to the patent department.

DATE REDACTED

I have read and understood the invention described in this Invention Report

Date:
Signature of Manager or Patent Engineer

21-JAN-2008
Seppo Rouru

13. Experts

If you know any experts that are able to comment the invention, list them here. Also, please mention if you are aware that a certain patent engineer has earlier experience of similar invention reports.

Juha Maalismaa patent engineer
Jaakko Hulkko expert

14. Further comments

Any further comments may be put here, e.g., if you consider the invention to require further development, know of a related earlier invention report in Nokia by you or others, or have any additional information that you think may otherwise affect the decision process.

Need to handle as soon as possible. If will be patented, so all countries covered.

15. The figures

Place the figures here, or among the description of the implementation. Alternatively, include the figures in a separate document (PowerPoint etc.).

I have read and understood the invention described in this Invention Report

Date:
Signature of Manager or Patent Engineer

21-JAN-2008
Seppo Reuna

ATTACHMENT 2
SEPPO ROUSU

36615 GPS ANTENNA DETUNING WHEN GSM TRANSMITTER IS TRANSMITTING

Seppo Rousu and Marko Leinonen

date REDACTED

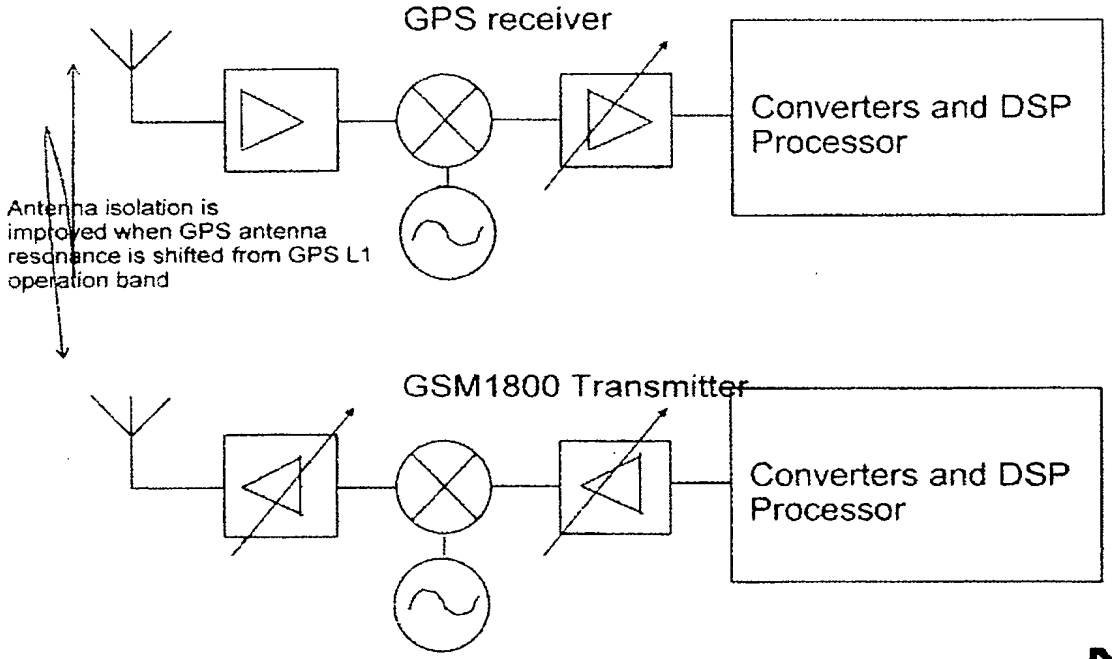
Additional information

NOKIA

date REDACTED

21-JAN-2008
Seppo Rousu

GPS antenna detuning to other frequency band

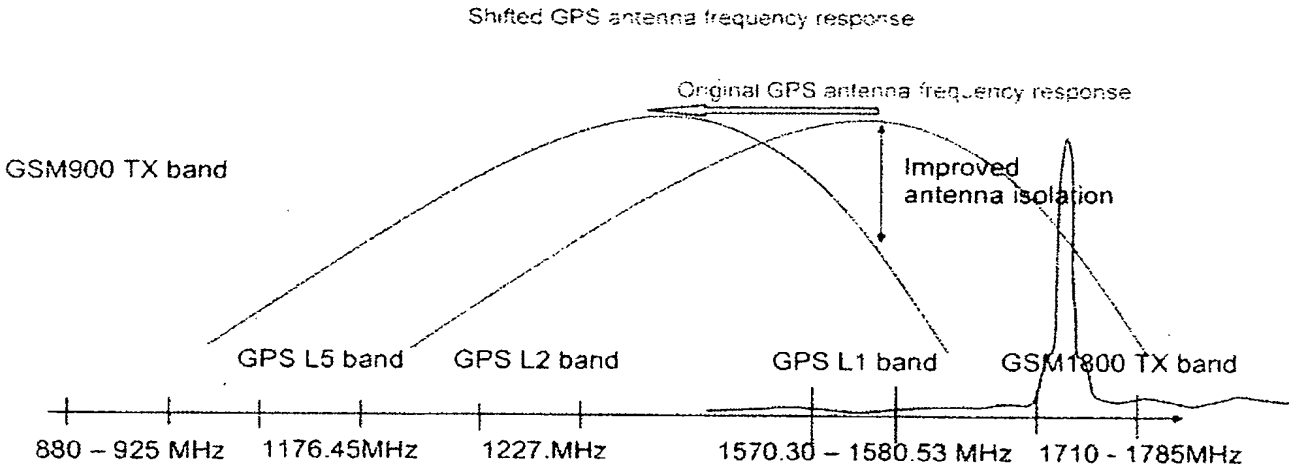


NOKIA

date REDACTED

21-JAN-2008
Seppo Ronn

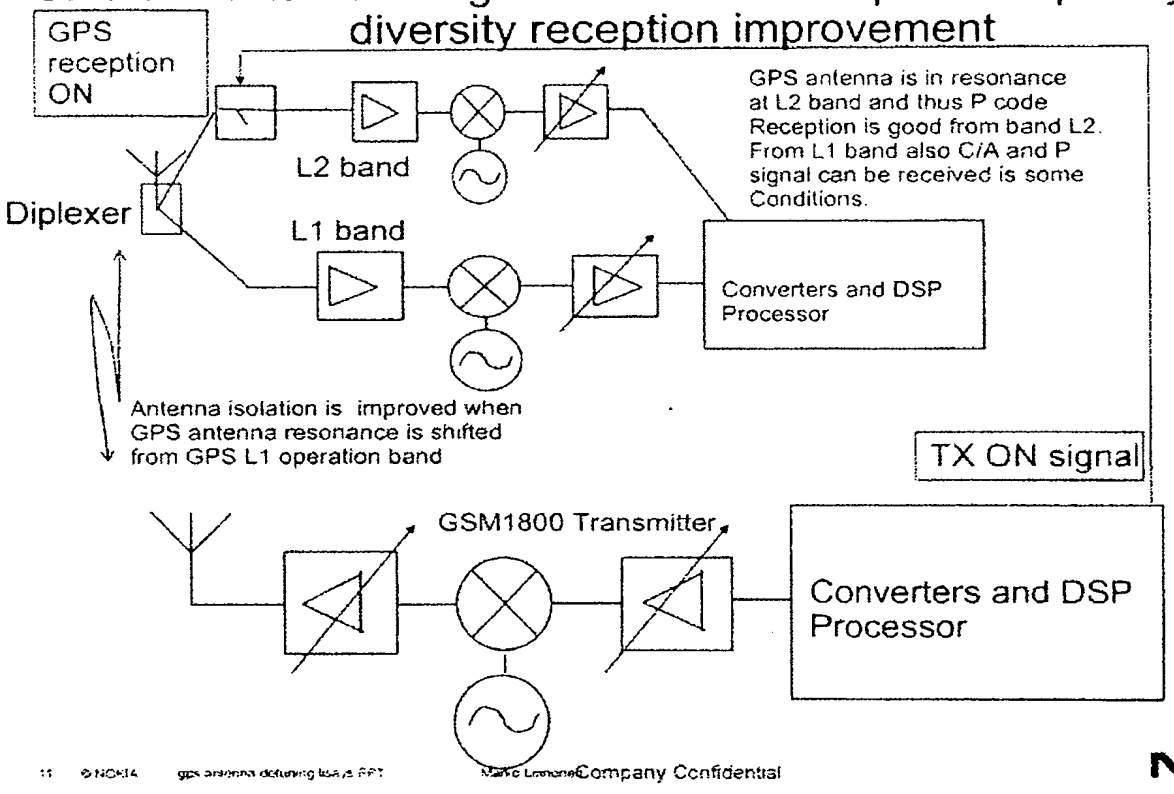
GPS antenna detuning to other frequency



date RESPACED

21-JAN-2008
Seppo Ranua

GPS antenna detuning to other GPS reception frequency band, diversity reception improvement



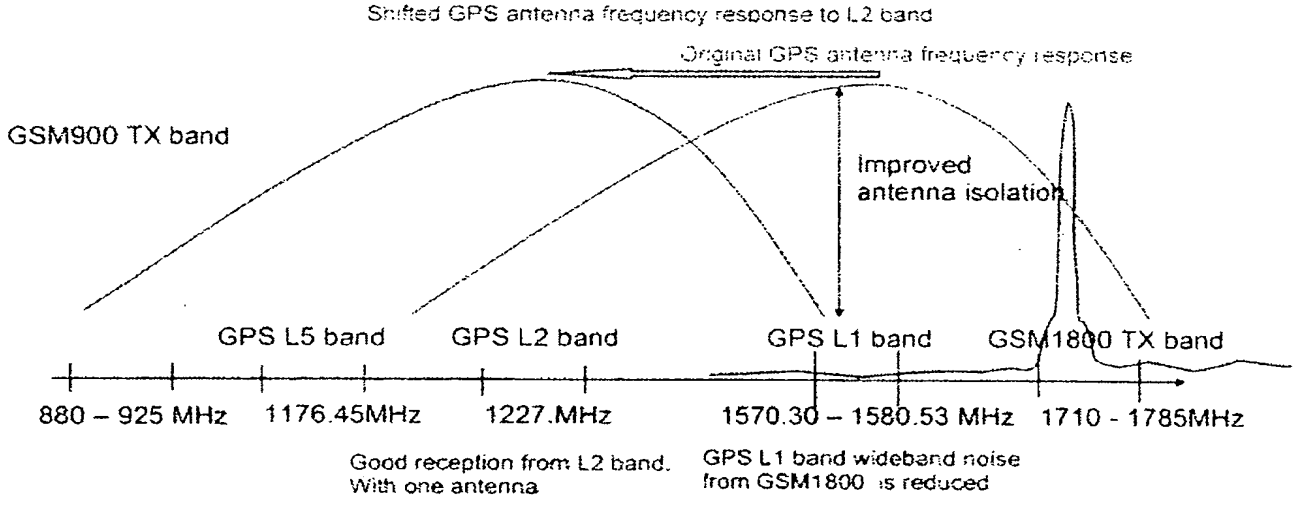
NOKIA

date REDACTED

21-JAN-2008
Seppo Rousu

GPS antenna detuning to other frequency band

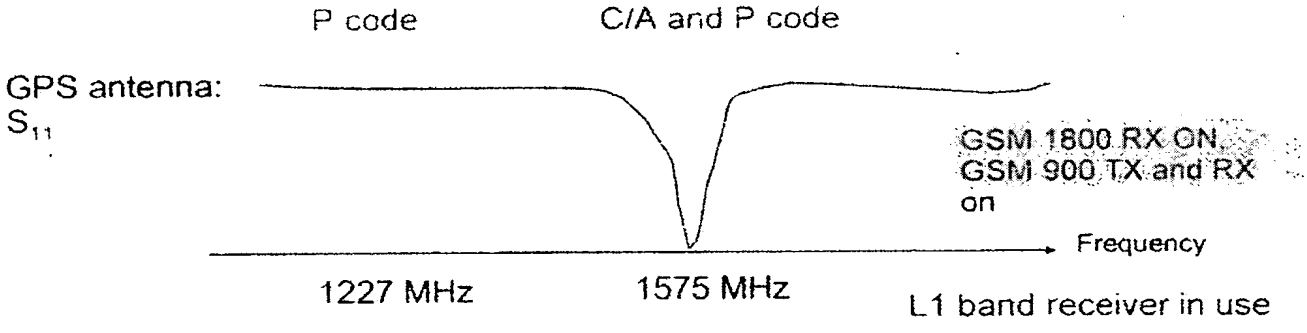
GPS L2 band will be also taken into civil usage in some years time.
Antenna can be detuned also to L5 band, if suitable signal is transmitted at that band.

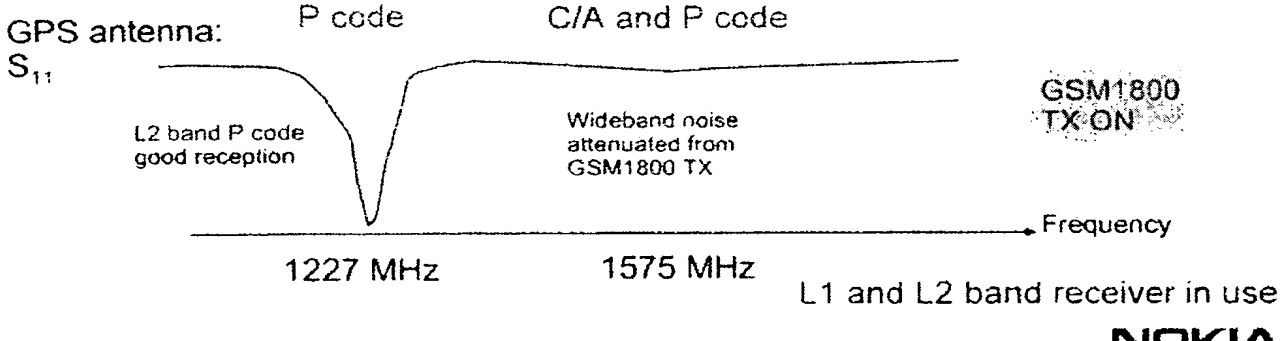


date REDACTED

21-JAN-2008
Seppo Rauma

GPS antenna detuning to other frequency EU band



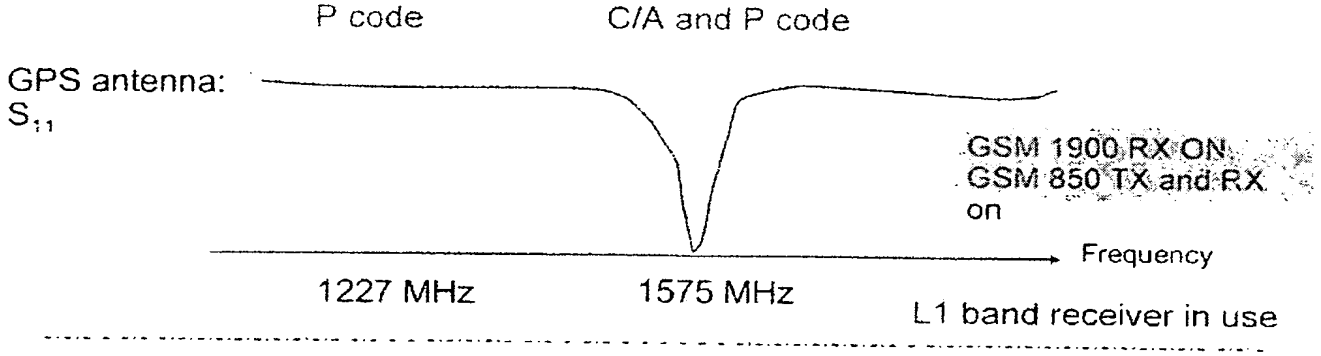


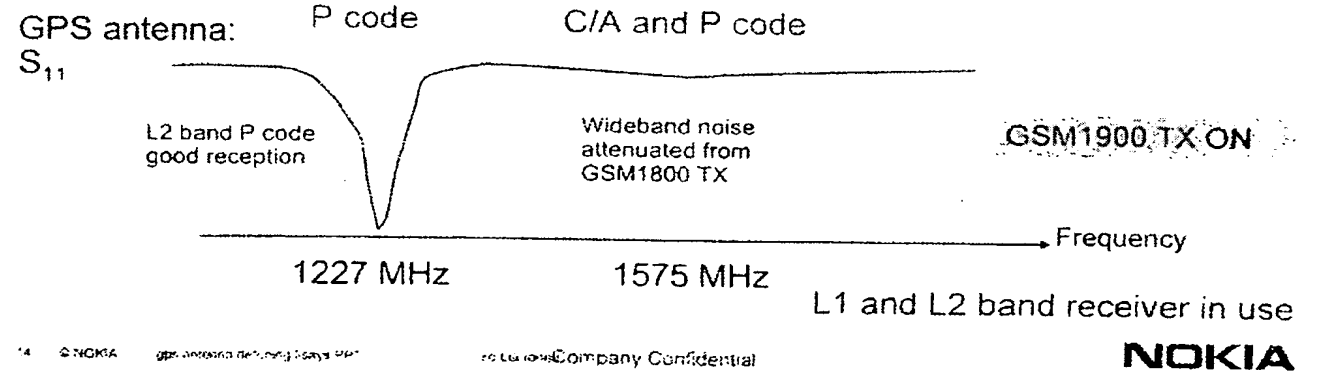
NOKIA

date REDACTED

21-JAN-2008
Seppo Rousu

GPS antenna detuning to other frequency US band



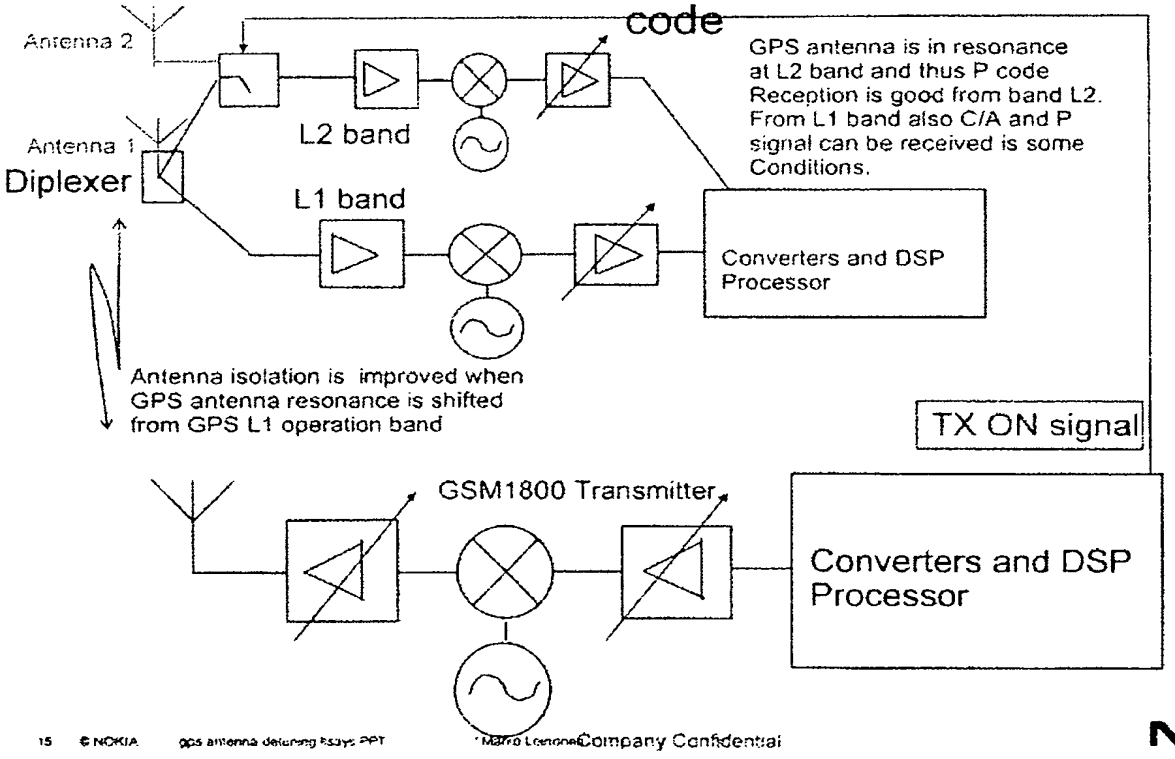


NOKIA

date REDACTED

21-JAN-2008
Seppo Rensu

GPS antenna detuning to other GPS reception frequency band, diversity reception improvement, if L2 band transmits C/A and P code



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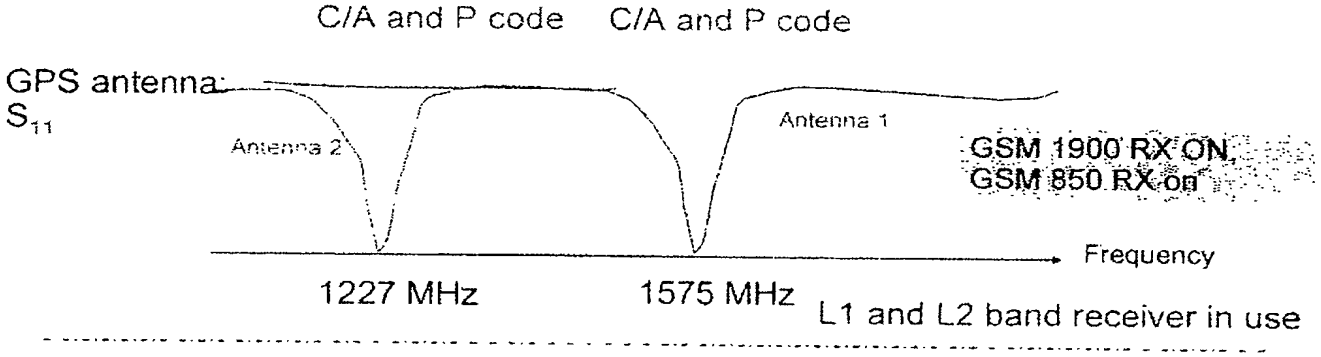
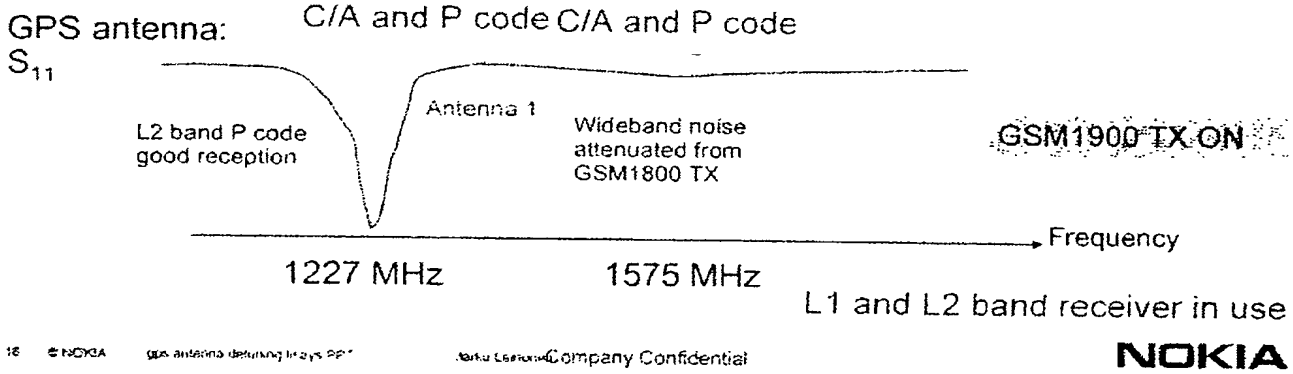
↑ date REDACTED

21-JAN-2008

Seppo Rousu

If L2 band will transmit C/A code in future, US band





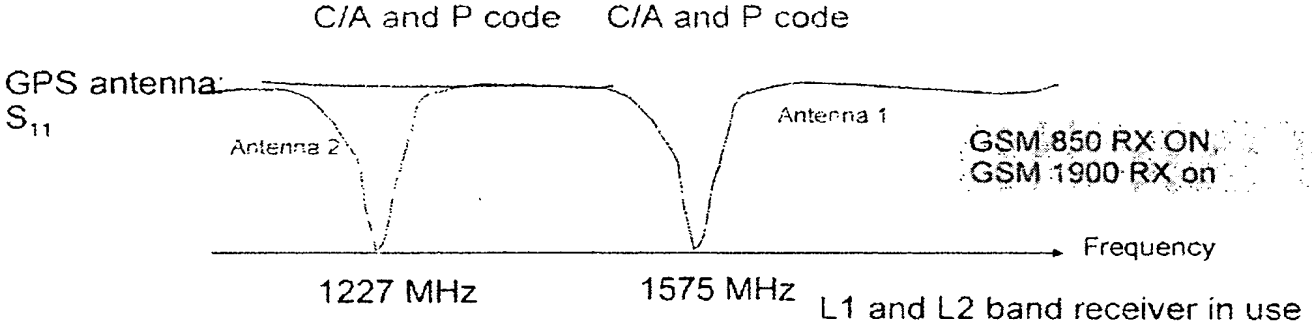
1

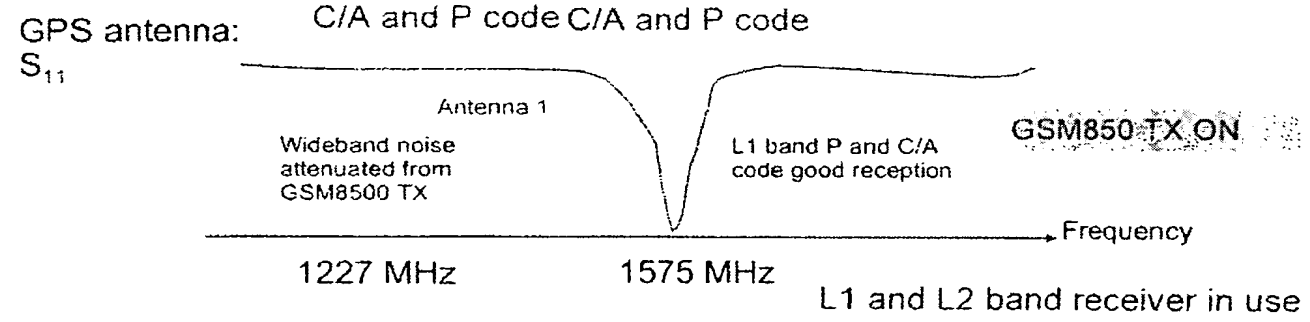
date REDACTED

21-JAN-2008

Seppo Ranua

GPS antenna detuning, if L2 banc will transmit C/A code in future





NOKIA

↑ date REDACTED

21-JAN-2008
Seppo Rousu

DECLARATION OF TIINA OJALA

I, TIINA OJALA, residing at Listatie 14, 90800 Oulu, FINLAND, do declare and say:

1. I am an employee of Nokia Corporation, and am a resident citizen of Finland and was the Patent Engineer for Nokia case NC36615 within the assignee corporation concerning the events described below.

2. I received an invention report prior to May 15, 2003 from employee inventor Seppo Rousu who is also employed by my employer, i.e., Nokia Corporation.

3. I then made the invention report of record in an electronic database assigning invention report number NC36615.

4. A copy of the electronic database record for case NC36615 created by me is attached as attachment 1 (with the date redacted) and is authenticated as a true copy by Timo Sallinen, IPR Manager.

5. A copy of the invention report itself is attached as attachment 2 (with date redacted).

6. Both of these documents describe the invention as being to increase attenuation between GPS and GSM antennas with attenuation increased by detuning GPS antenna out of the GPS frequency when GSM transmitter is transmitting and leaving the GPS antenna in normal center frequency operational mode when the GSM is not transmitting.

7. I set a decision deadline prior to May 15, 2003 for decision by the Patent Board.

8. I received an email about a week later from the same inventor with further technical information in the form of a power point slide set, a copy of pages 1 and 9-17 thereof being attached hereto as Attachment 3 and which represents structures that appear in Figures 2-8 of the U.S. Patent Application Serial No. 10/559,918 and adding Marko Leinonen who is also an employee of Nokia Corporation as a co-inventor.

9. Prior to May 15, 2003, I sent drafting instructions to the patent firm of Cohausz & Florack, i.e., prior to June 1, 2003 (Attachment 4) setting a filing deadline of Week 24 of 2003 (June 9-13).

10. After receiving a first draft by email of May 15, 2003 (Attachment 5) and commenting thereupon on May 23, 2003 by return email (Attachment 6), we received back a second draft by email on May 23, 2003 (Attachment 7).

11. I sent an email (Attachment 8) to Cohausz & Florack on May 28, 2003 concerning a discussion pertaining to the GPS and Galileo Systems and asking Cohausz & Florack to add discussion of same to several applications in preparation at the same time concerning GPS and which were to be filed on the same day in Week 24 of 2003.

12. We also replied by email of June 2, 2003 with comments to the draft of May 23, 2003 as evidenced by the attached email dated June 2, 2003 (Attachment 9).

13. In response to the comments to the second draft, we received a third draft sent by email from the law firm of Cohausz & Florack on June 2, 2003 to which we replied by email (Attachment 10) with comments on June 3, 2003 asking that the case be filed in the International Bureau on June 10, 2003 to be coordinated with the filing of three other GPS applications (three handled by Cohausz) the same day in order to provide sufficient time for final preparations for coordinated filing of the three cases by Cohausz and the fourth by another firm and in view of the public holiday in Germany on Monday, June 9, 2003 and the long holiday weekend of June 7-9, 2003 (Attachment 10).

14. We subsequently received a report from Cohausz & Florack on June 12, 2007, a copy attached (Attachment 11) that the case had been filed on June 10, 2007 in the International Bureau as an international application PCT/IB03/02174.

15. All of the above described events involving the sending and receiving of emails by me occurred in Finland which is a WTO country and was a WTO country at the time of these events.

I further declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that all these

statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code.

Date: 28 January 2008 Tiina Ojala

Tiina Ojala

FACET - By NC Code | NC 8615 GPS ANTENNA

Close | Edit | Invention report received | Request for comments | Decision document | Copy to Tuby | New Drafting Order

Invention

DATE REDACTED

NC Code	NC38615
Title of the Invention	GPS ANTENNA DETUNING WHEN GSM TRANSMITTER IS TRANSMITTING
Nokia Inventors	Seppo Rousu Marko E Leinonen
Non-Nokia Inventors and Employers	
Receiving date (dd mm yyyy)	
Publication date (dd mm yyyy)	
Patent Engineer	Tiina S Ojala
Patent Board	(inactive) TEC ENG DATE REDACTED
Patent Board date	
Nokia Classification	
Project	
Product	
Standard(s)	

Problem to be solved or situation to be improved
GSM PA generates noise to GPS band 1575.42 MHz +/- 5MHz. This wideband noise prevents performance of GPS receiver

Solution or Improvement
Invention is to increase attenuation between GPS and GSM antennas. Attenuation is increased by detuning GSP antenna out of the GPS frequency. This operation is done only when GSM transmitter is transmitting. When GSM is not transmitting, in that case GPS antenna is in normal center frequency operation mode
Additional feature: The GPS antenna could also be detuned to other GPS reception frequency band for example from L1 to L2
More detailed in the NC38615_additional ppt document

Invention report (attachment)

NC38615_additional.ppt NC38615_IPR GPS Antenna Seppo Rousu v011.doc

Copies of the art documents or print out documents with short comments

NC38615_picked_up10756.pdf

Summary of export options(s)
Comments from Seppo Turunen (only in Finnish)
GPS antenna detuning when GSM transmitter is transmitting

Tama on nahdakseni keino kiertaa prior artin ratkaisu

This is a true record and representation of the electronic database record for Case NC 38615

Timo Sallinen

Timo Sallinen, IPR Manager

28 January, 2008 Tiina Ojala

TIINA OJALA

ATTACHMENT 1
TIINA OJALA

Tama on mahdaksemme kerno kertaa prior artin ratkaisu
tavalla, joka ei ole missään suhteessa sitä selvästi edullisempi
Ryksimiehen on kohdistunut niin suoraan sanamuodon kertämiseen,
että epäilen, kannattaako yrittää hakea patenttia Tämä on itse asiassa prior
artissa mainittua (jälkimmäistä) vaihtoehtoa
epäedullisempi tapa katkaista häirisignaali, koska
lähetysslotin aikainen lämpökohina jää heikentämään lopputulosta
Prior artissa koko lähetysslotin aikainen mittaus hylätään, jolloin
näin ei käy.

Patent engineer conclusion and recommendation
This invention suggests that the GPS antenna is detuned when the GSM transmitter is on, in that way the attenuation is increased By using this invention the GMS transmission would not disturb the GPS receiver When detuning the GPS antenna also the GPS signal is attenuated therefore in some cases the GPS signal could not be detect When the GPS signal is strong it is possible to get GPS signal used even though the GPS antenna is detuned But if the GPS signal is weak, the antenna detuning would cause that the GPS signal could not be detect
Despite the fact that the GPS signal could not be detectable in all cases when the GSM transmitter is on this invention solves a problem (GSM transmitter is disturbing the GPS receiver) and gives a better solution than the Krasner patent (in that Krasner patent the GPS signal is blocked / reject when the GSM transmitter is on)
Suggested decision PAT J

Additional remarks
DATE REDACTED

Official Decision reasons
ADD This invention needs more study and some expert opinions For example following issues needs to be find out what is the basic idea, benefits and How does this invention differes from NC36350 etc.

PC decision

(•) PAT	( ) IND	( ) NGP (Provisional Filing)
( ) SEC	( ) CAD	( ) PPB
( ) In Process	( ) Received	( ) RES (Provisional Filing)
( ) MER	( ) USE	( ) Provisional Filed
( ) NOP	( ) UTM	
( ) RER	( ) ADD	

Rating

( ) 0	( ) Not yet decided
( ) 1	( ) 1S
( ) 2	( ) 2S
(•) 3	( ) 3S
( ) 4	( ) 4S
( ) 5	( ) 5S

Foreign Filing Programme

This is a true record and representation of the electronic database record for case NC 36615

Timo Sallinen

Timo Sallinen, IPR Manager

28. January, 2008 Tiina Ojala

TIINA OJALA

ATTACHMENT 2
TIINA OJALA

NOKIA **CONFIDENTIAL**

INVENTION REPORT

Title of the invention: GPS antenna detuning when GSM transmitter is transmitting	**INVENTION REPORT RECEIVED** Code: 36615 Patent Engineer/Committee:
Please type the description of the invention in this template. If you choose to use an attachment, make sure you answer all the questions in the template.	Place: Oulu Date: [← date redacted] Signature of receiver: Tarja Tiainen

Names, employee numbers, job titles and nationalities of **all inventors**:	Home addresses of the inventors in respective order:	Business/Technology Units and cost centres:
Seppo Rousu	Seppo Rousu Sahankuja 1 90800 Oulu Finland	NMP Technology

Email addresses of the inventors working outside Nokia:	
Office address of the **first inventor acting as a contact**: Elektonlikkatie 10, 90571 Oulu	
Phone of the first inventor: +358 (0)50 5626068	Fax of the first inventor:
Line manager(s): Tomi Mollanen	
Project: Grape engine platform	Project Manager: Mika J. Väyrynen
Related product(s): Grape, Yoda	Related standard(s):
The invention becomes public on (see section 11 of the invention report): 1Q/05	

I am/ We are the sole/ and original inventor(s) of this invention.

The company may, by virtue of applicable legislation, be entitled to full or partial rights to the invention. I/ We acknowledge my/ our obligation to sign as inventor(s) all documents that may be required for protecting the invention in different countries.

Applicable to inventions made by Inventors employed in FI, DK, DE and SE only.
Unless the inventor requests the Invention Report to be responded to within four (4) months from the date this Invention Report is received or such other period as the mandatory provisions of the applicable local law may otherwise require, the inventor consents to the right of the employer to use a reasonable period of time for the evaluation of the invention. A reasonable period of time may exceed four (4) months.
☒ *I/ We request that the Invention Report be responded to within four (4) months.*

Date: [← date redacted]
Signature(s) of Inventor(s): Seppo Rousu

FORMAL REQUIREMENTS FOR FILING THE INVENTION REPORT
The invention report must have the names of all the inventors and their home addresses. The first mentioned inventor is assumed to be the contact person in matters concerning the invention report. In the fields of office address, phone and fax, please fill in the contact person's information. Fill in the project field, if the invention is made in a project. The original Invention Report is signed by all inventors. Each page of the original invention report is signed by a manager. In case it is difficult to obtain the manager's signature your patent department will take care of it. The signed invention report is given directly to the local or business or unit's patent department. The invention report should also be submitted electronically to the patent department of the business or technology unit.

28 January 2008 Tiina Ojala TIINA OJALA

I have read and understood the invention described in this Invention Report

Date:
Signature of Manager or Patent Engineer

NOKIA CONFIDENTIAL

DESCRIPTION OF THE INVENTION

1. Field of technology and background

Describe here the technology and the areas of use the invention relates to. Provide here general background knowledge that is required to understand the framework of the invention, and describe the problem to be solved and the invention later.

GSM and GPS (Global Positioning System) will be implemented in same phone. GPS receiver is not performing well if GSM transmitter is transmitting.

2. Problem

Describe here the problem that the invention solves or the situation that the invention improves, and preferably concentrate on the technical aspects of the problem or the situation.

GSM PA generetes noise to GPS band 1575.42 MHz +/-5 MHz. This wideband noise prevents performance of GPS receiver

3. Prior art

Describe here how the problem was solved earlier. Please state also the source of prior art accurately.

Currently we have two possible solutions to solve problem in Nokia platforms.

A) Place GPS notch filter in Transmitter chain to reduce TX noise on GPS band
B) Use patented solution by third party. GPS receiver is blanked when GSM transmitter is transmitting.

4. Invention

Put here a short crystallization of the invention on a general level including possible use cases.

Invention is to increase attenuation between GPS and GSM antennas. Attenuation is increased by detuning GPS antenna out of GPS frequency. This operation is done only when GSM transmitter is transmitting. When GSM is not transmitting, in that case GPS antenna is in normal center frequency operation mode.

5. Implementation

Describe exemplary implementations in detail with alternatives here, including at least the implementation you consider to be the best. Describe the crucial elements in detail.

Implementation is done by detuning GPS antenna center frequency to other frequency. Tuning can be done by diode or other suitable components.

6. Advantages and disadvantages

Describe here how the invention improves earlier solutions. Also, if you are aware of any advantages or disadvantages, please state them here.

Considering chapter 3.

A) Additional components is not needed in transmitter chain.
GPS Notch filter causes loss to tx path and increases current consumption and heating.
Talktime and standtime are decreased.

28 January 2008 Tiina Ojala

I have read and understood the invention described in this Invention Report

TIINA OJALA 2

Date:
Signature of Manager or Patent Engineer

Invention is cheaper than solution A.

B) Advantage is that IPR royalties is not needed to pay for third party.

7. List of figures

Write the figure captions here as a list (Figure 1 presents ..., Figure 2 presents ...) and include the images into the invention report (section 5 or section 15) in Word-compatible format (i.e., no embedded images that won't show on the screen when the document is viewed) labelled with the figure number (Figure 1., Figure 2.). Alternatively, include the figures in a separate document (PowerPoint etc.), but make sure to include the description of the figures also here.

8. List of abbreviations

9. Supervision

Explain here how we can (if possible) recognise if a competitor is using the same product/feature.

By opening competitors phone.

10. Commercial value

Evaluate three aspects here: a) is the invention planned to be used in a Nokia product (which), b) is the invention going to be proposed to a standard (which), and c) would Nokia's competitors benefit from the use of the invention (who/how)?

a) Invention is potential solution to used in all GSM/GPS Nokia products, Grape engine platform
c) Competitors can use also invention when cross lisenced.

11. Publication

If the invention is becoming public in any way, please describe the exact way and details of publication here: what will be disclosed and how. For example, submission of standardization contributions, scientific papers, conference abstracts, theses or papers written for a degree and commercial brochures and offers for sale may be considered as "publication". Also, any use in a product that is publicly available or disclosure (written or oral) to another company without a non-disclosure agreement (NDA) is considered to be a publication.

Invention is applicable with Gryphons GPS by Nokia, which will be available 1Q/05. Yoda is may be lead product to use GryPhonS.

12. Dates of the invention

If you can; put here the date when you first thought of the invention (this date should be verifiable from your personal dated notes). Also, if you have completed the invention, e.g., written a computer program, put this date here (the completion should be verifiable by a witness). Also, provide all evidence material relating to the dates to the patent department.

[ ] date REDACTED

28. January 2008 Timo Jal

I have read and understood the invention described in this Invention Report

Date:
Signature of Manager or Patent Engineer

13. Experts

If you know any experts that are able to comment the invention, list them here. Also, please mention if you are aware that a certain patent engineer has earlier experience of similar invention reports.

Juha Maalismaa patent engineer
Jaakko Hulkko expert

14. Further comments

Any further comments may be put here, e.g., if you consider the invention to require further development, know of a related earlier invention report in Nokia by you or others, or have any additional information that you think may otherwise affect the decision process.

Need to handle as soon as possible. If will be patented, so all countries covered.

15. The figures

Place the figures here, or among the description of the implementation. Alternatively, include the figures in a separate document (PowerPoint etc.).

28 January 2008 Tina Olsen TIINA OLSEN

I have read and understood the invention described in this Invention Report

Date:
Signature of Manager or Patent Engineer

ATTACHMENT 3
TIINA OJALA

36615 GPS ANTENNA DETUNING WHEN GSM TRANSMITTER IS TRANSMITTING

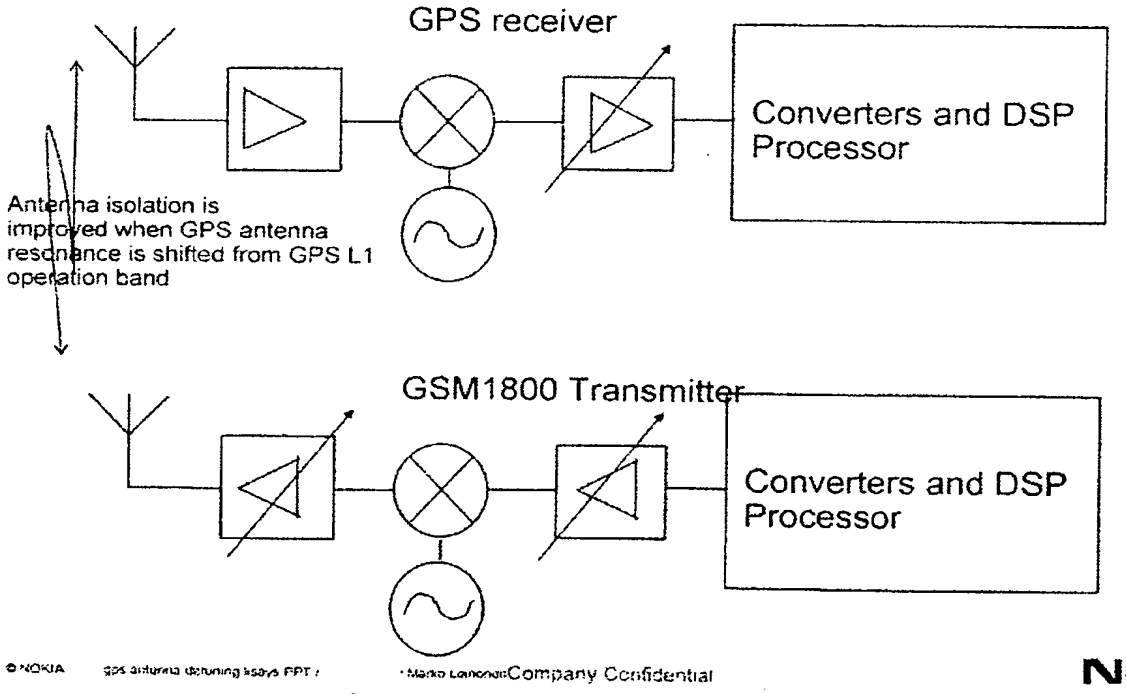
Seppo Rousu and Marko Leinonen
[ ] ← date redacted

Additional information

date redacted

28 January 2008 Tiina Ojala
TIINA OJALA

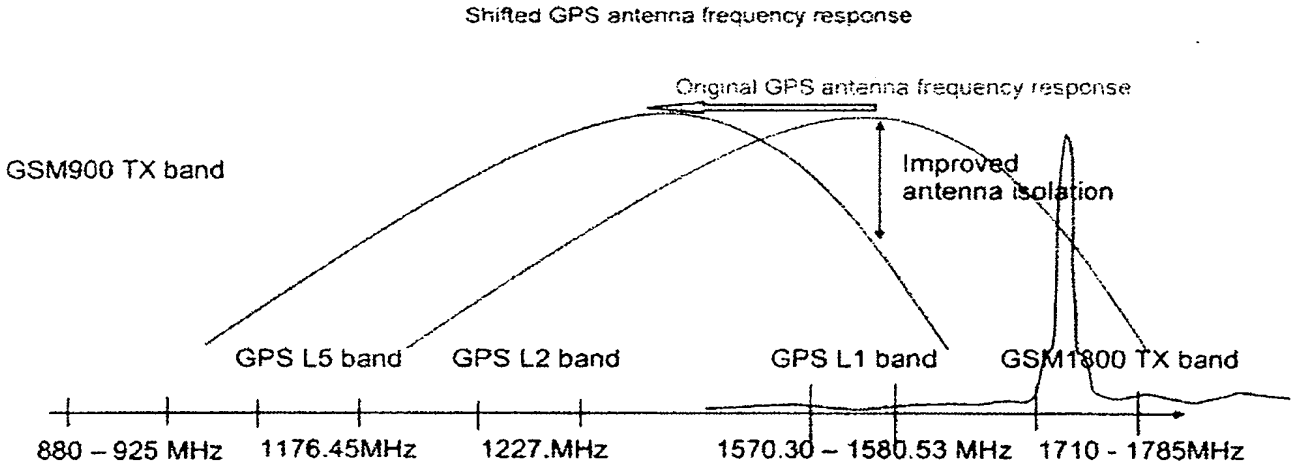
GPS antenna detuning to other frequency band



date redacted

28 January 2008 Tina Ojala
TINA OJALA

GPS antenna detuning to other frequency



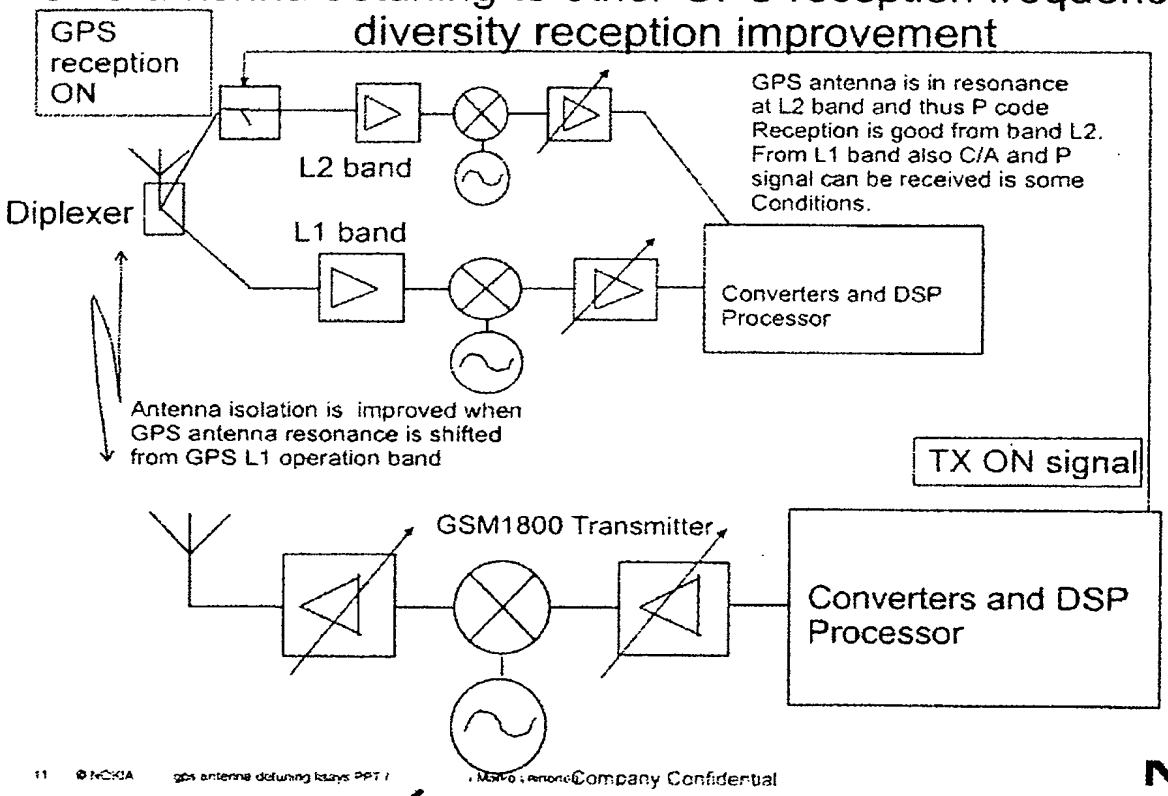
NOKIA

date redacted

28 January 2008 Tiina Ojala

TIINA OJA-LA

GPS antenna detuning to other GPS reception frequency band, diversity reception improvement



NOKIA

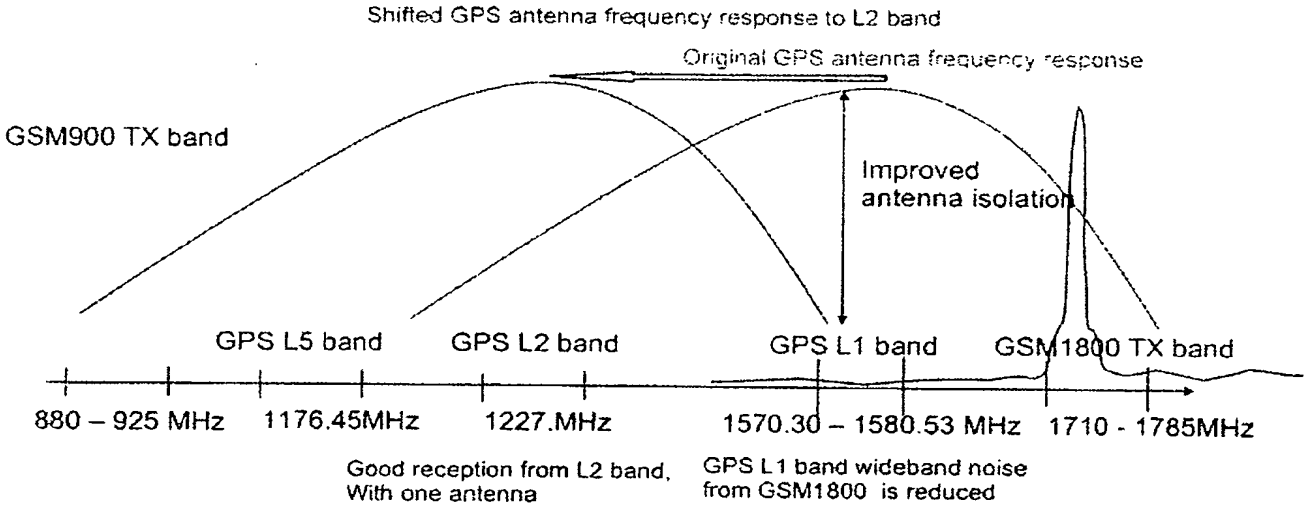
date redacted

28 January 2008 Tiina Ojala

TIINA OJALA

GPS antenna detuning to other frequency band

GPS L2 band will be also taken into civil usage in some years time.
Antenna can be detuned also to L5 band, if suitable signal is transmitted at that band.



NOKIA

date redacted

28 January 2008 Tiina Ojala

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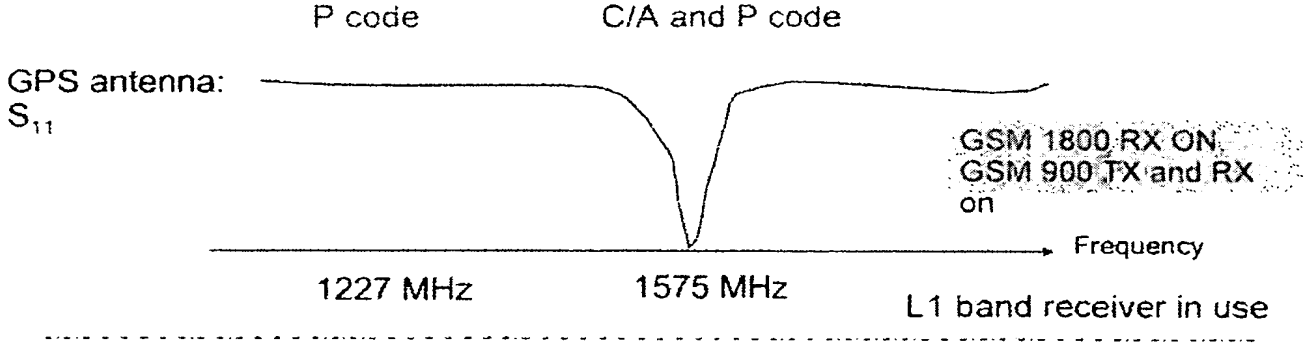
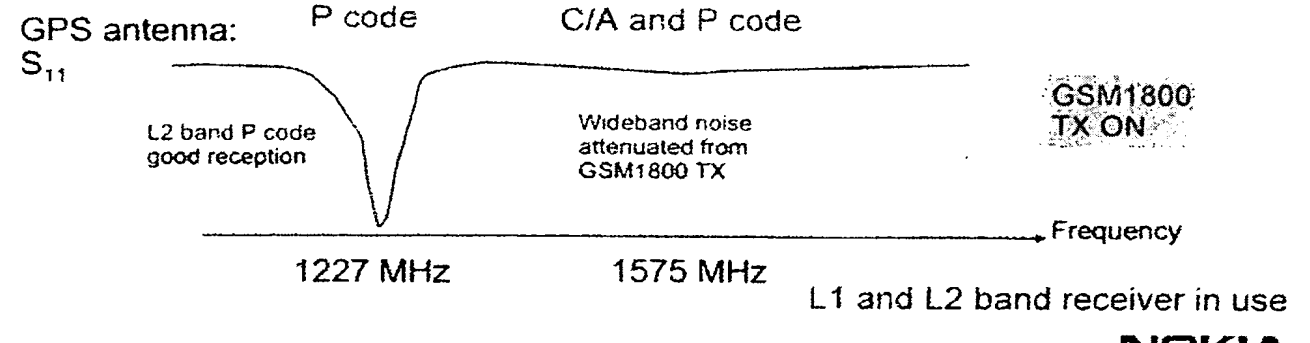
GPS antenna detuning to other frequency EU band

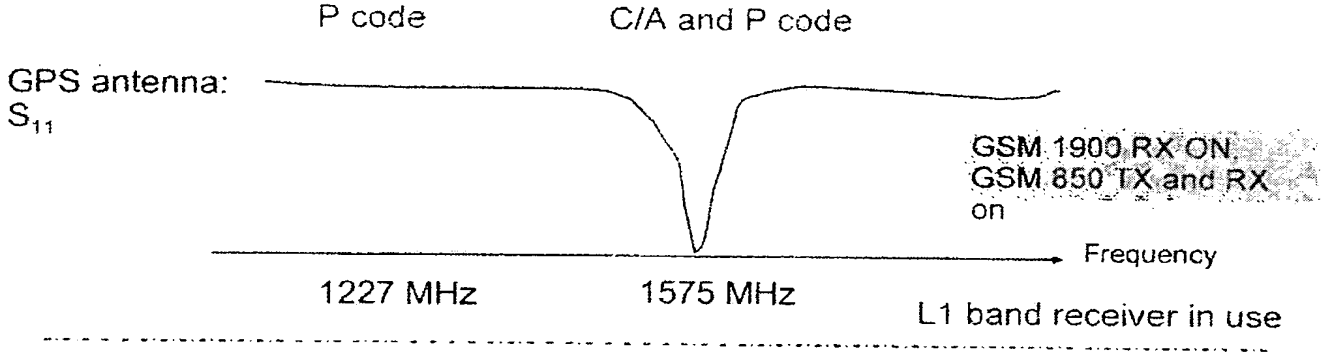


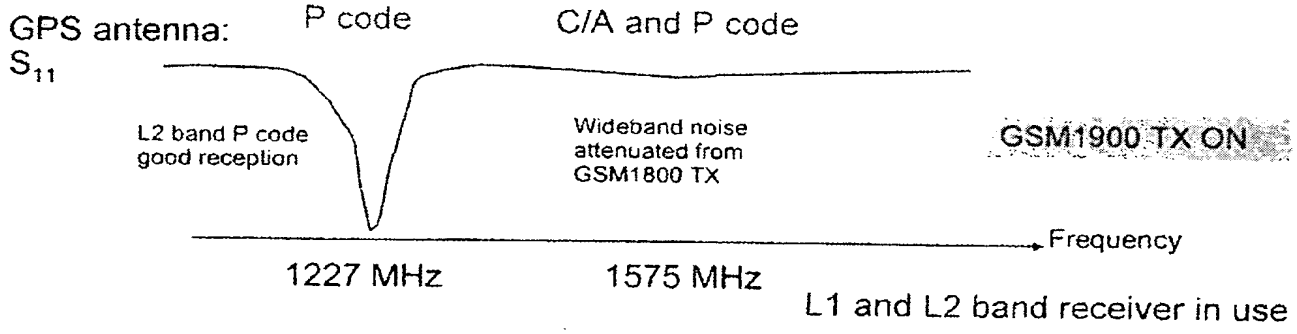


date redacted

28 January 2008 Tiina Ojala, TIINA OJALA

GPS antenna detuning to other frequency US band





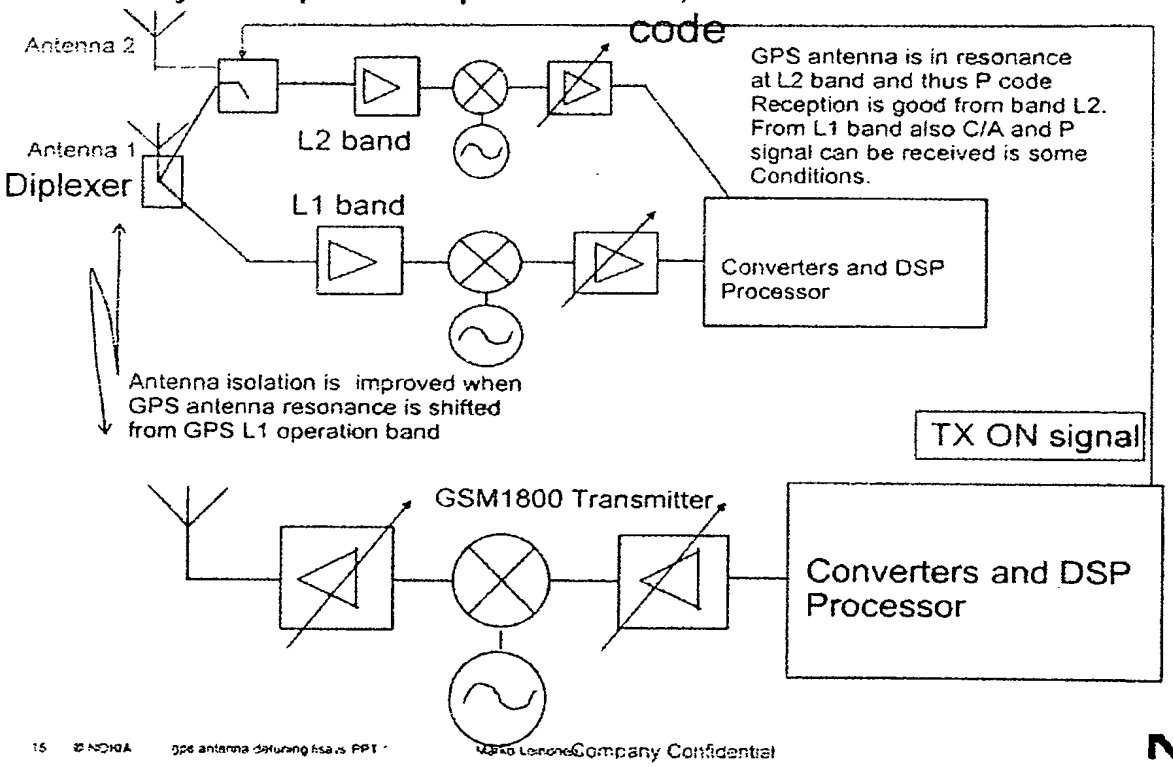
14 © NOKIA [illegible] Nokia Confidential Company Confidential NOKIA

date redacted

28 January 2008 Tiina Ojala

TIINA OJALA

GPS antenna detuning to other GPS reception frequency band, diversity reception improvement, if L2 band transmits C/A and P code



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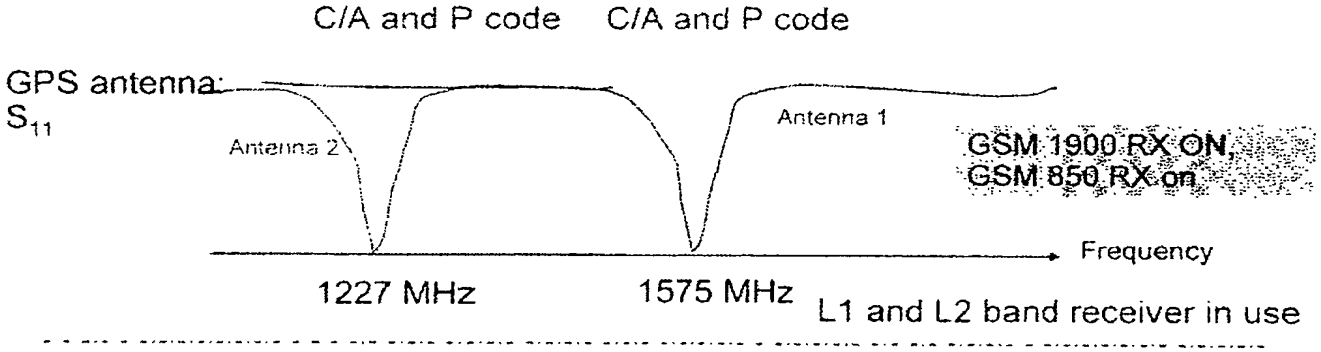
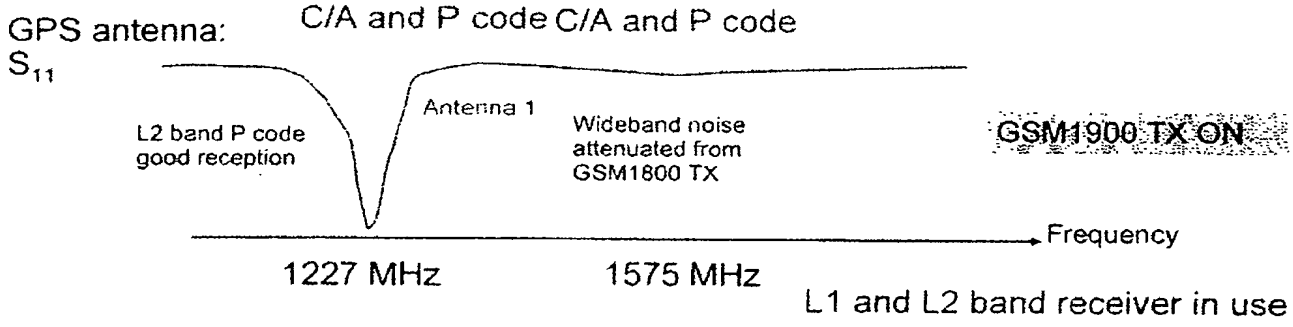
date redacted

28 January 2008 Tiina Ojala

TIINA OJALA

If L2 band will transmit C/A code in future, US band



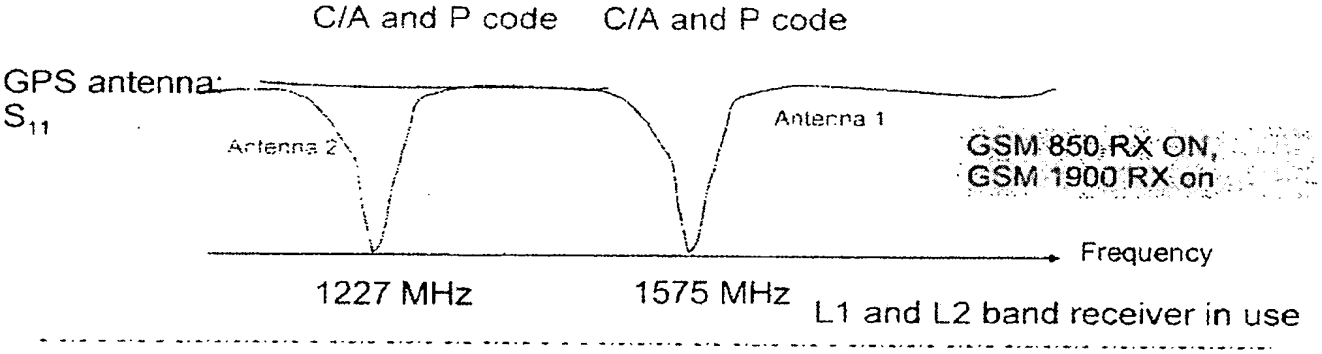


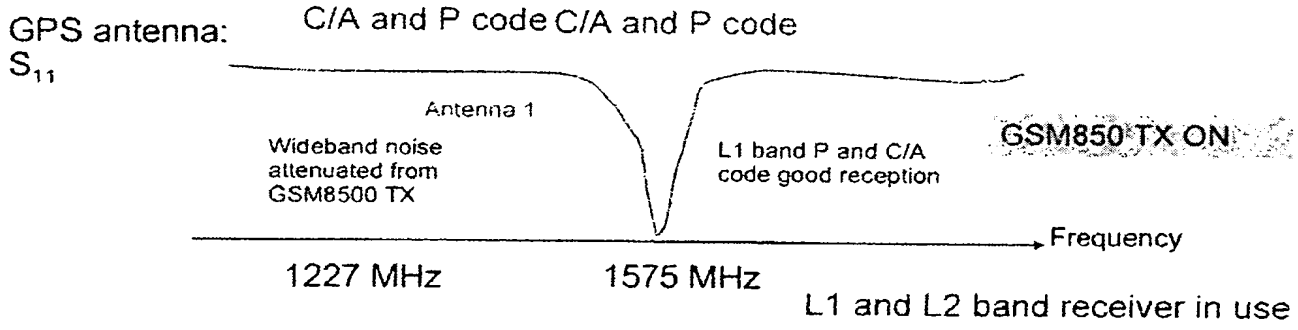
date redacted

28 January 2008 Tiina Ojala

TIINA OJALA

GPS antenna detuning, if L2 banc will transmit C/A code in future





NOKIA

date redacted

28 January 2008 Tiina Ala
TIINA ALA

10303446.0

ATTACHMENT 4
TIINA OJALA

Patent-Agency Cohausz-Florack (EXT-RES/Helsinki)

Von: Ojala Tiina.S (NMP/Oulu) Gesendet:Di [redacted] 14:32
An: Patent-Agency Cohausz-Florack (EXT-RES/Helsinki)
Cc:
Betreff: Invention NC36615 for drafting
Anlagen: NC36615_statement of invention.doc(66KB) NC36615_priorart_us6107960.pdf(1MB)
NC36615_IPR GPS Antenna.doc(128KB) NC36615_addition.ppt(171KB)

date redacted

2 weeks after request

Hi

Here is one GPS invention for drafting and filing: GPS ANTENNA DETUNING WHEN GSM TRANSMITTER IS TRANSMITTING.

This invention should be filed on week 24 via PCT, and the first draft on week 19-20. Please inform me is the filing schedule ok and who is going to do drafting?

BR Tiina

<<NC36615_statement of invention.doc>> <<NC36615_priorart_us6107960.pdf>> <<NC36615_IPR GPS Antenna.doc>> <<NC36615_addition.ppt>>

<<NC36615_statement of invention.doc>> <<NC36615_priorart_us6107960.pdf>>
<<NC36615_IPR GPS Antenna.doc>> <<NC36615_addition.ppt>>

28. January 2008 Tiina Ojala
TIINA OJALA

date redacted
[ ]

Patent-Agency Cohausz-Florack (EXT-RES/Helsinki)

Von: Patent-Agency Cohausz-Florack (EXT-RES/Helsinki) Gesendet: Do 15.05.2003 10:12
An: Ojala Tiina.S (NMP/Otahi)
Cc:
Betreff: Tiina Ojala/Alexandra Weyres, NC36615WO (030344WO), Application draft
Anlagen: 030344WO Application draft text.doc(85KB) 030344WO Application draft figures.doc(245KB)

Dear Tiina,

Please find enclosed for your review our first draft for the above identified planned international patent application.

In your assignment letter for invention NC36617WO (030346WO), you had indicated that invention NC36535 proposes to increase the attenuation if there are any outside interferences. Therefore, we had restricted the independent claims in the case NC36616WO (030345WO) to the use for internal interferences.

We assumed for the present case, in contrast, that invention NC36535 does not disclose the possibility of detuning the antenna if there are any outside interferences. Therefore, we formulated the independent claims to cover also devices which do not comprise a GSM transmitter or the like. Please inform us in case this assumption is not correct.

At least if the broad formulation is kept, we recommend to file also this application not later than application NC36617WO (030346WO), as here, detuning was mentioned as one possibility of attenuating external interferences.

Best regards,

Alexandra Weyres
COHAUSZ & FLORACK

28 January 2008 Tiina Ojala
TIINA OJALA

Patent-Agency Cohausz-Florack (EXT-RES/Helsinki)

Von: Ojala Tiina.S (NMP/Oulu) **Gesendet:** Fr 23.05.2003 11:18
An: Patent-Agency Cohausz-Florack (EXT-RES/Helsinki)
Cc: APP-NOTES/NMP_Oulu_Itchy@nokia.com
Betreff: Tiina Ojala/Alexandra Weyres, NC36615 (030344WO), Drafting instructions, "comments to the 1. draft"
Anlagen: 030344WO Application draft text commented MLe and Rousu 2004031.doc(132KB)

Dear Alexandra,

Attached are the inventors comments to the first draft of the case NC36615WO (030344WO). Inventors also asked to include C/A code to the figure 5 additional to the P-code. I didn't have anything to add those inventors comments. Please send us the second draft to review.

BR Tiina

<<030344WO Application draft text commented MLe and Rousu 2004031.doc>>

28 January 2008 Tiina Ojala
TIINA OJALA

Patent-Agency Cohausz-Florack (EXT-RES/Helsinki)

Von: Patent-Agency Cohausz-Florack (EXT-RES/Helsinki) **Gesendet:** Fr 23.05.2003 20:22
An: Ojala Tiina.S (NMP/Oulu)
Cc:
Betreff: Tiina Ojala/Alexandra Weyres, NC36615WO (030344WO), second application draft
Anlagen: 030344WO Application draft text V2.doc(95KB) 030344WO Application draft figures V2.doc(290KB)

Dear Tiina,

Please find enclosed for your further review a draft amended according to your comments. All changes were marked in yellow. Only some passages which were not quite clear to us (mentioned below as items 3-5) were marked in blue.

1) As it was indicated for NC36617WO (030346WO) that the receiver does not have to be a satellite positioning system receiver, we assumed that this is also the case in the current invention.

2) For this application, we had included the "future development in GPS" in the "detailed description" section with reference to the embodiments making use of L2 and L5 signals. Since the inventors had added a description of the future developments in the "Background" section (as in the other two related applications), we cancelled the respective passage in the "detailed description" section.

3) The inventors corrected that "It is better for the performance of the GPS receiver to receive signals with a particularly low SNR than not to receive any signal at all during short time intervals." On the other hand, in the invention report NC36616WO, it was mentioned that "GPS signal prevention is wanted feature since the receiver stands better lack of GPS signal than noise is applied into GPS receiver." Aren't high noise and low SNR directly correlated to each other? It seems that with the detuning in case of noise according to the invention, signals having a low SNR due to the noise are prevented from being received. Thus, we should rather cancel the indication that it is better for the performance to receive signals with low SNR, if this is correct, since this would otherwise apparently be a clear indication that the object of the invention is not reached with the detuning.

4) It was added by the inventors that a "problem arises when the noise level rises, and the AGC tries to adjust an incoming signal to a certain appropriate level for the A/D conversion". What is the disadvantage of adjusting the incoming signal for the A/D conversion in the case of noise?

5) It was added by the inventors that "Typically, a diplexer combines two input path signals having different frequencies to one output path signal." The diplexer in this case processes received signals, though. Could we thus state alternatively "Typically, a diplexer divides one input path signal to two output path signals having different frequencies."? Or at least add that "Here, a diplexer divides one input path signal to two output path signals having different frequencies.", or the like?

Best regards,

Alexandra Weyres
COHAUSZ & FLORACK

28 January 2008 Tiina Ojala
TIINA OJALA

ATTACHMENT 8
TIINA OJALA

NOKIA DOCUMENTTYPE 1 (3)

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TypeYourNameHere TypeDateHere

Copy of Drafting order

Document
Submitted by
tojala on 02-Jan-2004 at 10:18

NC Code	NC36615WO
Date	28.05.2003
Action	Drafting instructions
Category	Fling
PE	Jussi Vesterinen
Inventor	Seppo Rousu, Marko Leinonen
Agency	Cohausz & Fibrack
Attorney	
Due date	
Comments	Galileo
Original path	
Original subject	Tiina Ojala / Alexandra Weyrer, NC36615WO (030344WO), Drafting instructions, "Galileo"

Attachments: Inch text

Dear Alexandra,

There was one thing that perhaps should be added to all of those GPS drafts: NC36615 (030344WO), NC36615 (030345WO)and NC36617 (030346WO)
In those drafts there was only mentioned GPS as a satellite position system, perhaps Galileo system should be also mentioned. The GPS is a USA satellite position system and Galileo is the European satellite position system.

28 January 2008 Tiina Ojala
TIINA OJALA

These systems have some similarities but also some differences. In those attached documents and links you can find out more information in that Galileo system

What do you think, should there be something about Galileo system in those drafts? Would it be enough just mentioned in the "background of the invention" section that also one possible satellite position system can be Galileo additional to GPS? Or should there be also some basics about Galileo?
In all of those drafts claims are covering both GPS and Galileo (at least in main claims the was not GPS mentioned) so I think that we would not have to change claims. Perhaps you could write a short chapter which would define the basics of the Galileo satellite position system and after the inventors have comment that, the chapter would be then added to all of those drafts. What do you think, would that be ok?

Additional to this Galileo comment there was only few small comments to the drafts, which I will send in different mails.

BR Tiina

> -----Original Message-----
> From: Rousu Seppo (NMP/Oulu)
> Sent: 16 May, 2001 16.56
> To: Leinonen Marko.E (NMP/Oulu); Ojala Tiina.S (NMP/Oulu
> Subject: FW: GPS IPR:s vs Galileo
>
>
> http://www.esa.int/export/esaCA/navigation.html
>
> http://europa.eu.int/comm/dgs/energy_transport/galileo/index_en.htm
>
Technical documents
> http://europa.eu.int/comm/dgs/energy_transport/galileo/documents/technical_en.htm





>

Additional information: tech text

28 January 2008 Tiina Ojala

TIINA OJALA

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02-Jan-2004, Tiina S Ojala
02-Jan-2004, Tiina S Ojala
02-Jan-2004, Tiina S Ojala

28 January 2008 Tiina Ojala
TIINA OJALA

ATTACHMENT 9
TIINA OJALA

NOKIA

DOCUMENTTYPE 1 (4)

TypeUnitOrDepartmentHere
TypeYourNameHere

TypeDateHere

Comments to D2

Document

Submitted by
ojala on 07-Jun-2003 at 11:19

NC Code	NC36615WO
Date	9206 2003
Action	Drafting instructions
Category	Filing
PE	Graham Rowse
Inventor	Seppo Rousu, Marko Leinonen
Agency	Conleusz & Florack
Attorney	
Due date	
Comments	Comments to 2 draft
Original path	
Original subject	Tiina Ojala/Alexandra Weyles NC36615WO (936344WO): Drafting Instructions "Comments to 2 draft"

Attachments: Attached text

Dear Alexandra,

In the attached document are the inventors comments to the second draft of case NC36615WO (936344WO). There were quite small changes needed, so I think that there is no need to send the third draft to us, just make changes.

The Galileo text was good, no corrections or changes are needed to that text. Please insert the same Galileo text to all of these "satellite position system" drafts (NC36615, NC36616 and NC36617). After that these cases are

28 January 2008 Tiina Ojala

TIINA OJALA

ready to be filed, but before the actual filing the one Tampere invention must be wait these cases and Tampere case should be filed at the same day! The Tampere case is going to be filed 10th of June at latest, but I will inform that actual filing day as soon as possible.

BR Tiina

> > > -- Original Message --
> > > From: Patent Agency Ossaus-Florack (EXT-PAS/Helsinki)
> > > Sent: 23 May, 2003 10:13
> > > To: Ojala Tiina S (NMP-Oulu)
> > > Subject: Tiina Ojala/Alexandra Weyrow, NC36613WO (010346WO), second
> > > application draft
> > >
> > >
> > > Dear Tiina,
> > >
> > > Please find enclosed for your further review a draft amended
> > > according to your comments. All changes were marked in
> > > yellow. Only some passages which were not quite clear to us
> > > (mentioned below as items 3-5) were marked in blue
> > >
> > > 1) As it was indicated for NC36617WO (010346WO) that the
> > > receiver does not have to be a satellite positioning system
> > > receiver, we assumed that this is also the case in the
> > > current invention
> > >
> > > 2) For this application, we had included the 'future
> > > development in GPS' in the 'detailed description' section
> > > with reference to the embodiments making use of L2 and L5
> > > signals. Since the inventors had added a description of the
> > > future developments in the 'Background' section (as in the
> > > other two related applications), we cancelled the respective
> > > passage in the 'detailed description' section.
> > >
> > > 3) The inventors corrected that "It is better for the

28 January 2008 Tiina Ojala
TIINA OJALA

> > > performance of the GPS receiver to receive signals with a
> > > particularly low SNR than not to receive any signal at all
> > > during short time intervals." On the other hand, in the
> > > invention report NC\66IFWD, it was mentioned that "GPS signal
> > > prevention is wanted feature since the receiver stands better
> > > lack of GPS signal than noise is applied into GPS receiver."
> > > Aren't high noise and low SNR directly correlated to each
> > > other? It seems that with the detuning in case of noise
> > > according to the invention, signals having a low SNR due to
> > > the noise are prevented from being received. Thus, we should
> > > rather cancel the indication that it is better for the
> > > performance to receive signals with low SNR, if this is
> > > correct, since this would otherwise apparently be a clear
> > > indication that the object of the invention is not reached
> > > with the detuning.
> > >
> > > c) It was added by the inventors that a "problem arises when
> > > the noise level rises, and the AGC tries to adjust an
> > > incoming signal to a certain appropriate level for the A/D
> > > conversion". What is the disadvantage of adjusting the
> > > incoming signal for the A/D conversion in the case of noise?
> > >
> > > b) It was added by the inventors that "Typically, a diplexer
> > > combines two input path signals having different frequencies
> > > to one output path signal." The diplexer in this case
> > > processes received signals, though. Could we thus state
> > > alternatively "Typically, a diplexer divides one input path
> > > signal to two output path signals having different
> > > frequencies."? Or at least add that "Here, a diplexer divides
> > > one input path signal to two output path signals having
> > > different frequencies.", or the like?
> > >
> > > Best regards,
> > >
> > > Alexandra Weyres
> > > COHAUSZ & FLORACK

28 January 2008 Time Stale

NOKIA

DOCUMENTTYPE 4 (4)

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TypeDateHere

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>

Additional Information:

20-Oct-2005, Tiina Ansamaa
20-Oct-2005, Tiina Ansamaa
04-Jun-2003, Tiina S Ojala
04-Jun-2003, Tiina S Ojala

28 January 2008 Tiina Ojala

TIINA OJALA

ATTACHMENT 10
TIINA OJALA

NOKIA DOCUMENTTYPE 1 (3)

TypeUnitOrDepartmentHere
TypeYourNameHere TypeDateHere

Final doc

Satellite positioning assist project meeting

Document

Submitted by
tojala on 03-Jun-2003 at 11:02

NC Code	NC36615WO
Date	03.06.2003
Action	Drafting instructions
Category	Filing
PE	Graham Rowse
Inventor	Seppo Rousu, Marko Leinonen
Agency	Cohausz & Florack
Attorney	
Due date	
Comments	Comments to 3 draft
Original path	
Original subject	Tiina Ojala/Alexandra Weyres, NC36615WO (030344WO) Drafting instructions, "Comments to 3 draft"

Attachments: Inch text

Dear Alexandra,

The third draft of case NC36615WO (030344WO)was good, no changes are needed.
Please file this case on 10th of June.

Bk Tiina

28 January 2008 Tiina Ojala
TIINA OJALA

TypeUnitOrDepartmentHere
TypeYourNameHere TypeDateHere

> ----Original Message ----
> From: Patent-Agency COHAUSZ-FLORACK (EXT RES/Helsinki)
> Sent: 02 June, 2003 18:33
> To: Ojala Tiina.S (NMP-Oulu)
> Subject: Tiina Ojala Alexandra Weyres, NC36615WO (338344WO)..
> third draft
>
>
> Dear Tiina,
>
> just for completeness, we provide you with the version for
> filing showing the last amendments.
>
> We will wait with the filing until we hear from you regarding
> the Tampere case, which has to be filed the same date.
>
> Please note that Monday, June 9, 2003 is a national holiday
> in Germany. Thus, we would appreciate if the cases could be
> filed either before the weekend or on the 10th of June.
>
> Best regards,
>
> Alexandra Weyres
> COHAUSZ & FLORACK
>
>
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>

Additional Information:

28 January 2008 Tiina Ojala
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TypeUnitOrDepartmentHere
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TypeDateHere

20-Oct-2005, Tarja Anttimaa
04-Jun-2003, Tiina S Ojala
04-Jun-2003, Tiina S Ojala

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ATTACHMENT 11
TIINA OJALA

COHAUSZ & FLORACK
Patent- und Rechtsanwälte

STATUS REPORT of June 12, 2003 (PCT-APPLICATION)

Title	:	**GPS ANTENNA DETUNING WHEN GSM TRANSMITTER IS TRANSMITTING**
Our file	:	030344WO
Your file	:	NC 36615
Official filing number	:	PCT/IB03/02174
Applicant	:	Nokia Corporation
Designated Countries	:	all PCT-member states
Inventor(s)	:	conditions Seppo Rouso, Marko Leinonen
Application date	:	June 10, 2003
Request for preliminary international examination due:		**January 10, 2005**
Entry into national phase **without** international examination due	:	**February 10, 2005**
Entry into national phase **with** international examination due	:	**December 10, 2005**
Maximum duration	:	depends on the national laws of the elected states

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